



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, ILLINOIS 60604

DATE: [OCT. 17 2016]

SUBJECT: CLEAN AIR ACT INSPECTION  
REPORT  
General Electric Aviation, Evendale Plant,  
Cincinnati, Ohio

FROM: Albana Bega, Environmental Engineer  
AECAB (MI/WI)

THRU: Sarah Marshall, Section Chief  
AECAB (MI/WI)

TO: File

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**BASIC INFORMATION**

**Facility Name:** General Electric Aviation, Evendale Plant (GE Aviation)

**Facility Location:** One Neumann Way, Cincinnati, Ohio

**Date of Inspection:** March 8, 2016

**Lead Inspector:** Albana Bega, Environmental Engineer

**Other Attendees:**

1. Kevin Vuilleumier, EPA, Environmental Engineer
2. Joanne M. Reinhold, GE Aviation, Evendale Air Program Leader
3. Jennifer K. Hardenbrook, GE Aviation, Evendale Environmental Health and Safety Manager
4. Bruce Seyberth, GE Aviation, Operation Leader of Special Product Operation
5. Joe Hollowell, Ayer Quality, Quality Contractor

**Purpose of Inspection:** To determine compliance with rules and regulations promulgated under the Clean Air Act (CAA)

**Facility Type:** Engine and engine parts manufacturer for aircrafts

**Regulations Central to Inspection:** Title V, 40 CFR Part 63 Subpart P P P P P - Engine Test Cells/Stands, 40 CFR Part 63 Subpart G G - National Emission Standards for Aerospace Manufacturing and Rework Facilities, 40 CFR Part 63, Subpart D D D D D - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters.

**Arrival Time:** 4:15 PM

**Departure Time:** 7:30 PM

**Inspection Type:**

- ☒ Unannounced Inspection
- ☐ Announced Inspection

**OPENING CONFERENCE**

- ☒ Credentials Presented
- ☒ CBI warning to facility provided

The following information was obtained verbally from GE Aviation personnel during the tour of the facility, unless otherwise noted.

**Process Description:**

GE Aviation, a subsidiary of General Electric, is an aircraft engine suppliers, and offers engines for the majority of commercial aircraft. The facility has 1,500 employees. Headquarters of the GE Aviation is located at the site with a total of 5,000 employees.

We started the tour of the facility following a brief introduction regarding the purpose of the inspection.

**TOUR INFORMATION**

**EPA toured the facility:** Yes

**Data Collected and Observations:**

We started the tour of the facility at the production site to check the special production operation (SPO). The SPO has two similar recirculating robotic coating booths that apply coating to production parts. Xylene, toluene, and methyl ethyl ketone (MEK) solvent-based are used in the coating process. They apply two coatings (xylene and toluene) in the first booth, and a third coating (MEK) in the second booth. The second booth was installed in late September 2015. They run one shift of 8-9 hours (hrs) on the first booth and 9-10 hrs on the second one. There is a time to dry between coatings sprayed. They keep records of coating used in each booth. The MEK booth operates at lower temperature when compared to the xylene/toluene coating booth. The MEK coating is a protective coating to corrosion while the xylene/toluene coatings are

thermo-protective coatings. After coating the part goes into a post dry cure oven. Curing time varies.

For the xylene/toluene coatings oven temperatures are well above the 1,000 degrees Fahrenheit (°F) while for the MEK coating the temperatures are well below the 1,000 °F. Five (5) percent (%) of volatile organic compounds (VOCs) come off the oven/furnace, as determined through measurements of the weight of the product. All furnaces and heating equipment are electrical.

We observed the final step of the xylene/toluene coating process in the first booth. Emissions from this step go to filters and a bag house. Each booth has three layers of filtration. The magnehelic readings of the differential pressure of the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> stage filters were 0.46, 0.15, and 0.90 inches of water column, respectively. The facility does not record any pressure drop readings. According to them, no pressure drop record is required per the permit and manufacturer recommendations. The second booth was not operating at the time of the tour. The facility has also two other advance coating spray booths in the research and development (R&D) site, which we decided not to tour.

Next, we checked the engine test cells Number (No.) 5 and 6 where product quality control tests are performed. We met with Kevin Hundley, the 2<sup>nd</sup> shift manager. The test runs for approximately 2-3 hrs while the preparation for the test takes 1-1.5 days. All tests are done only on the engines assembled at the facility. We observed the start-up test. There are no controls in the test cells and exhaust is vented to the atmosphere. Emission calculations are based on fuel records. Multiple tests are also run for the same engine.

We left the Cell No. 6 and proceeded to the Cell No. 45 where GE Aviation tests marine industrial engines. EPA notice a strong "smell", similar to hydrogen sulfide (H<sub>2</sub>S), outside and inside the building. GE Aviation denied the possibility of the smell coming from their processes. However, they will investigate and report back to EPA.

Next, we toured the Cell No. 38 which was dedicated to the R&D engines. We met with Jason Gutzwiller, the 2<sup>nd</sup> shift team leader. They have four identical cells (No. 38, 40, 43 and 44) where they simulate different environments (altitude, temperatures, pressure etc.). They use natural gas fired heaters and chillers. They believe the chillers are not chlorofluorocarbons (CFCs) units.

At the boiler building we met with Ed Stacy, the "watch engineer". They have three 142 million British Thermal Units (mmBTU)/hour natural gas fired boilers (No. 5, 6, and 8), with No.2 fuel as a backup. All boilers date back to 1950. They run test of the water chemistry of the boilers. They produce 150-180 pounds of steam for heating and process use in certain test cells. Also, the steam is used as a fire suppression in case of a fire in any of the test cells. Each boiler has two burners of 7 mmBTU/hr.

The facility has a carpenter shop for boxes and cases for shipping the engine. We did not tour the carpenter shop.

**Field Measurements:** were not taken during this inspection.

## RECORDS REVIEW

None

## CLOSING CONFERENCE

We finished the tour at 7:00 PM and returned to the office. We thanked them for their time and left the facility around 7:30 PM.

### **Requested documents:**

- Safety Data Sheet for all solvent used in the robotic coating process;
- Robotic coating booth filter specs;
- Calculation of the 5% VOCs emissions in the oven;
- Peak-shaving diesel generator performance testing; and
- H<sub>2</sub>S "smell" observed at the Cell No. 45 area.

## SIGNATURES

Lead Inspector: Alvare Bago Date: 10/17/16

Section Chief: Samuel M. Patel Date: 10/17/16